

## THE GENUS PLINTHUS.

By I. C. Verdoorn.

The genus *Plinthus* was described by Fenzl. in "Nov. Stirp. Mus. Vindob. Dec. VII n 60 in 1839 with the single species *P. cryptocarpus*. It was founded on a plant collected by Drège near Rietpoort Nieuweveld. In 1913 (Engl. Bot. Jahrb. vol. 48, p. 499) two further species were described, *P. sericeus* Pax and *P. Rehmannii* Schellenb. They differed from the type species in vegetative characters, the leaves all being alternate and not closely imbricate.

One of the species described for the first time in this paper, *Plinthus karoocicus*, differs from all the described species in the number of the ovary chambers, styles and perianth lobes. While these differences might be considered sufficient to justify the species being placed in a distinct genus, a study of all the available herbarium material shows many characters in common which bind them together into a natural group. It has therefore been decided to amplify the description of the genus *Plinthus* Fenzl. to include this species.

The second species described here agrees with the original generic description as far as the gynoeceum is concerned but differs in the leaves being alternate and loosely arranged, that is each leaf usually shorter than the internode.

### **Plinthus Fenzl. descr. ampl.**

Suffrutex humifusus pilis diaphanis biacuminatis adpressis sericeus. *Folia minima* opposita vel alterna, imbricata, pilis biacuminatis sericea. *Flores* 1-3, axillares, sessiles vel sub-sessiles. *Calyx* 4-5-lobatus, extus pilis biacuminatis sericeus. *Corolla* nulla. *Stamina* 4-5, tubo inserta, cum sepalis alternantia. *Ovarium* 2-3-(rarius 4-) loculare, papillosum vel pubescente, loculis monospermis. *Stylus* 2-3-(rarius 4-) partitus.

### KEY TO SPECIES.

Ultimate shoots and most of the leaves opposite; the opposite leaves joined by a ridge giving the twigs a jointed appearance; leaves on terminal shoots imbricate:

- |  |                          |
|--|--------------------------|
| Perianth 5-lobed; ovary 3 (rarely 4-) chambered; styles 3 (4-) partite; leaves 4-6 mm. long..... | <i>P. cryptocarpus</i> . |
| Perianth 4-lobed; ovary 2-chambered; styles 2-partite; leaves 2-4 mm. long                       | <i>P. karoocicus</i> .   |

Ultimate shoots and all leaves alternate; leaves not imbricate:

- |   |                        |
|---|------------------------|
| Leaves when fully developed ovate-elliptic, petioled.....                                 | <i>P. Rehmannii</i> .  |
| Leaves linear to narrowly lanceolate, subsessile, usually longer than the internodes..... | <i>P. sericeus</i> .   |
| Leaves triquetrous, sessile, usually shorter than the internodes.....                     | <i>P. laxifolius</i> . |

***Plinthus karoocicus* Verdoorn sp. nov.; *P. cryptocarpo* Fenzl. affinis sed perianthio 4-lobato ovario 2-loculare, stylo 2-partito differt.**

Suffrutex humifusus, ramosus, basi valde lignosus, ramulis tenuibus ultimis oppositis pilis biacuminatis pubescentibus appresse. *Folia* sessilia, opposita alterna-que (opposita base transverse connata), imbricata, sub-carnosa, 2-4 mm. longa 0.5-1 mm. lata, dorso convexa, ventre concava, obtuse acuminata, pilis appressis retrorsis bi-acuminatis diaphanis

strigosa. *Flores* axillares, 2-3-nati, 2-3-bracteolati. *Perianthium* 4-lobatum  $\pm 1.75$  mm. longum; tubus 0.75 mm. longus; lobi 1 mm. longi, 0.75 mm. lati. *Stamina* 4; filamenta perianthio longiora. *Ovarium* 2-loculare, 0.75 mm. longum, apice pilis erectis, diaphanis pilosum. *Stylus* 2-partitus, ramis  $\pm$  divaricatis, 1 mm. longis.

A low growing much branched shrublet with a thick woody base and comparatively slender branchlets, the ultimate branchlets opposite, appressed pubescent with bi-acuminate transparent hairs. *Leaves* opposite and alternate, the opposite ones connected at the base by a ridge giving the twig a jointed appearance, imbricate on ultimate shoots, somewhat fleshy, rounded dorsally and concave on the face, bluntly pointed, about 2-4 mm. long, 0.5-1 mm. wide, pubescent with appressed bi-acuminate transparent hairs. *Flowers* axillary, 2-3-nate, 2-3-bracteolate; perianth  $\pm 1.75$  mm. long, 4-lobed; tube .75 mm. long; lobes 1 mm. long, 0.75 mm. broad, ovate. *Stamens* 4, inserted near the base of the tube and alternating with the lobes; filaments as long as or longer than the perianth. *Ovary* crowned with erect transparent hairs, 2-chambered, about 0.75 mm. long and 0.75 mm. diameter. *Style* 2-partite to the base, the branches diverging, about 1 mm. long.

#### ORANGE FREE STATE.

Fauresmith Dist., Heenenweerskop, *Smith* 5286 (Type) Cult. in Plots Fauresmith Veld Reserve, *Verdoorn* 1106, 2287.

#### CAPE PROVINCE.

Middelburg Dist., open veld College of Agriculture, Grootfontein, *Verdoorn* 1527, *du Toit* 29. Kimberley near Schmidts Drift Road. *Acocks in Herb. Hafstrom* H 1248; along Boshof Road, *Esterhuysen* 818. Prieska Dist. *Bryant* 343; Brakbosch, between Prieska and Kenhardt *Pole Evans* 2246 and 2247.

#### SOUTH WEST AFRICA.

Aus. *Dinter* 4131.

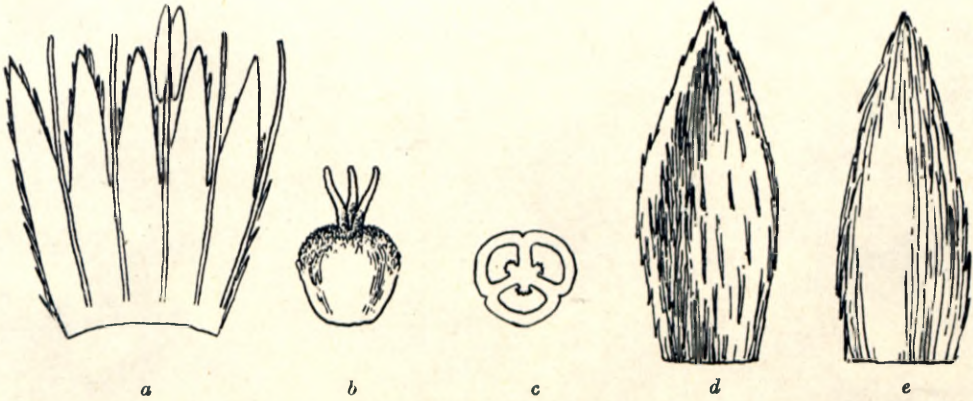
*Note.*—This plant is browsed by sheep in the Karroo and is considered to be a good fodder plant. It is known in the Fauresmith District as "Karoo Ganna".

***Plinthus laxifolius*** *Verdoorn* sp. nov; *P. sericeo* Pax affinis sed foliis laxis internodiis brevioribus differt.

Suffrutex (caulem non vidi) diffusus, ramosus, ramulis tenuibus alternis. *Folia* sessila, alterna, sub-carnosa, 3-7 mm. longa, 1 mm. lata, dorso convexa, ventro leviter canaliculata, obtuse acuminata, pilis appressis bi-acuminatis diaphanis pubescentia. *Flores* 2-3-bracteolati, axillares, 1-3-nati, in ramulis ultimis brevissimis pseudo glomerati. *Perianthium* 5-lobatum  $\pm 1.75$  mm. longum; tubus 0.75 mm. longus; lobi 1 mm. longi, 0.5 mm. lati, dorse pilis biacuminatis diaphanis sericei. *Stamina* 5; filamenta perianthio breviora, 0.75 mm. longa. *Ovarium* 3-loculare, papillosum, 0.5 mm. longum. *Stylus* 3-partitus, ramis  $\pm$  divaricatis, 0.5 mm. longis.

A much branched shrublet with slender branches, but basal part not seen; the younger oppressed pubescent with bi-acuminate, transparent hairs. *Leaves* all alternate, rather lax, mostly shorter than the internodes, somewhat fleshy, 3-7 mm. long, 1 mm. wide, rounded on the back and slightly canaliculate on the face, bluntly pointed, oppressed pubescent with bi-acuminate transparent hairs. *Flowers* 2-3-bracteolate in the axils of the leaves 1-3-nate, appearing glomerate in the upper leaves where they are clustered on very much abbreviated axillary shoots, not longer than the subtending leaf. *Calyx* 5-lobed; tube 0.75 mm. long; lobes 1 mm. long, 0.5 mm. wide, dorsally oppressed pubescent with bi-acuminate transparent hairs which project above the apex of the lobe. *Stamens* 5; filaments shorter than the calyx, 0.75 mm. long. *Ovary* 3-chambered, papillose, 0.5 mm. long; style 3-partite, branches diverging, 0.5 mm. long.

"Kalahari Sand Dunes", exact locality unknown, probably Kenhardt district, *Kotze* 824.



I.—*Plinthus cryptocarpus* Fenzl. Flower from Drege specimen ex Stockholm.

- (a) Perianth slit one side, shewing attachment of stamens.
- (b) Ovary and styles.
- (c) Transverse section of ovary.
- (d) Bract, dorsal view.
- (e) Bract, shewing inner surface.



II.—*Plinthus karooicus* Verdoorn. Flower from I. C. Verdoorn 1106.

- (a) Perianth slit one side, showing attachment of stamens.
- (b) Ovary and styles.
- (c) Transverse section of ovary.
- (d) Bract, showing inner surface.
- (e) Bract, dorsal view.



## OTTO KUNTZE TYPE SPECIMENS OF SOUTH AFRICAN PLANTS.

By R. A. Dyer.

In 1898 Otto Kuntze published his "*Revisio Generum Plantarum* vol. 3 pt. 2". In this he included an enumeration of specimens collected during his travels in South America (1891-2) and in South Africa (1894). An examination by American botanists of Otto Kuntze's type specimens of South American plants housed in the Herbarium of the New York Botanical Garden, revealed a large percentage of errors of identification. The suggestion was then made by the Head Curator of the Herbarium that an examination of the South African types would yield equally interesting results and that the types would be forwarded on loan to the National Herbarium, Pretoria, if it was desired to undertake the work. The offer was gratefully accepted and the present paper is the outcome.

As a general rule the types were found to be in a poor state of preservation due mainly to faulty preparation in the first place. Many of the specimens show marked evidence of mould. Not all the types cited by Kuntze were located in the New York Herbarium and it was suggested that some of those outstanding might have been misfiled. The following types were not seen by me, the page numbers being those of Kuntze's work cited above:—

*Nasturtium riparium*, p. 6.  
*Geranium robustum*, p. 32.  
*Acacia latibracteata*, p. 48.  
*Alepicida aquatica*, p. 110.  
*Anisothrix Kuntzei*, p. 129.

*Crocodilodes (Berkheya) amplexicaule*, p. 143.  
*Euphorbia laxiflora*, p. 286.  
*Sapium Simii*, p. 293.  
*Tragia Bolusii*, p. 293.

Some of these have been cited by later workers and in such cases their identifications are given with the reference to the respective publications. *Indigofera Kuntzei* (*Anila Kuntzei*) from Mosambique and *Limeum glaberrimum* from Delagoa Bay have been omitted. In most other cases the types have been matched with specimens in the National Herbarium, Pretoria. The examination of types of new varieties was not undertaken. It has been found necessary to establish the following new names and new combinations:—

*Berkheya microcephala* comb. nov. (*Stobaea microcephala* DC.) in a note under *Berkheya Kuntzei*.

*Senecio Verdoorniae* nom. nov. (*Hertia Kuntzei*).

*Senecio paucicephalus* nom. nov. (*Hertia natalensis*).

*Gnidia gymnostachya* (C. A. Mey.) Gilg. var. *phaeotricha* M. Moss comb. nov. (*Gnidia phaeotricha*).

*Gnidia sericocephala* (Meisn.) M. Moss comb. nov. (*Gnidia pretoriae*).

The identifications of the types are given in the order in which the descriptions appear in Kuntze's *Revision*. Where necessary the revised name follows that of Kuntze and the present accepted name is given in heavy type. I wish to express my appreciation of assistance with some of the indentifications by specialists in certain groups. The names of such workers appear under the respective species or family.

## TILIACEAE.

*Grewia Krebsiana* O. Kuntze, p. 26.—Cape Province; Beaufort West.

*G. robusta* Burch. Trav. 2, 133 (1824); Burret in Engl. Bot. Jahrb. 45, 195 (1911).

*G. flava* Harv. in Fl. Cap. I, 225 (1859–1860) not of DC.

## MALPIGIACEAE.

*Triaspis transvalica* O. Kuntze, p. 29.—Transvaal; Pretoria.

*Sphednocarpus transvaalicus* (O. Kuntze) Burt Davy Fl. Transvaal I, 284 (1932): (*S. transvaalica* in error).

As in several other instances Kuntze omits one *a* from *vaal* in forming the specific epithet from Transvaal.

## GERANIACEAE.

*Geranium robustum* O. Kuntze, p. 32; R. Knuth in Das Pflanzenr. 4, 129. 166 (1912)—Natal; Charlestown.

## RHAMNACEAE.

*Phylica glabriflora* O. Kuntze, p. 39.—Cape Province; Caledon.

*P. brevifolia* E. & Z. Enum. 133 (1834).

Identification by N. S. Pillans.

## (Ampelidaceae) VITACEAE.

*Vitis* (*Cissus*) *cradockensis* O. Kuntze, p. 40.—Cape Province; Cradock.

*Cissus quinata* Ait. Hort. Kew. ed. 2, I. 260 (1810); Gilg & Brandt in Engl. Bot. Jahrb. 46, 521 (1912).

*Vitis* (*Cissus*) *repandospinulosa* O. Kuntze, p. 41.—Natal; Ladysmith.

*Cissus humilis* (N.E.Br.) Planch. in DC. Mon. Phan. 5, 2, 463 (1887); Gilg & Brandt l. c. 488.

The Kuntze type is very mouldy and under this unnatural covering can be seen scattered hairs on the stem and inflorescence. The term *glaberrima* used by Kuntze in the description is therefore inaccurate.

Authenticated material of *Cissus dolichopus* C.A.Sm. in the Nat. Herb. Pretoria, exhibits a variable pubescence and it is considered that this name should also be referred to the synonymy of *C. humilis* (N.E.Br.) Planch.

## MELIANTHACEAE.

*Melianthus insignis* O. Kuntze, p. 43.—Natal; Charlestown.

*M. Dregeana* var. *insignis* Phill. & Hofmeyr in Bothalia 2, Ib. 352 (1927).

*M. comosus* Burt Davy in Fl. Transvaal I, 490 (1932), not of Vahl.

The type consists of two sheets, one each of flowers and fruits. Although closely allied to *M. Dregeana* the Kuntze species is sufficiently distinct to justify specific separation. In addition to its more robust habit, larger flowers and more densely pilose appearance, the fruits are considerably larger (1.5 cm. long) sub-oblong, with the valves strongly inflexed at the apex forming a depression, and not developed into a strong point as done by the inflexed valves of *M. Dregeana* Sond.

## LEGUMINOSAE.

*Anila pretoriana* O. Kuntze, p. 52.—Transvaal; Pretoria.

*Indigofera pretoriana* Harms ex O. Kuntze l. c.

*Calpurnia mucronulata* Harms ex O. Kuntze, p. 54.—Natal; Van Reenen's Pass.

*C. intrusa* E. Mey. Comm. Pl. 2 (1835).

*Cracca triphylla* O. Kuntze, p. 57.—Natal; Krantzkloof.

*Tephrosia macropoda* E. Mey. Comm. Pl. 112 (1835).

*T. triphylla* Harms ex O. Kuntze l. c.

Identification by H. M. L. Forbes.

## ROSACEAE.

*Alchemilla Woodii* O. Kuntze, p. 75.—Natal; Charlestown.

This species is very closely allied to *A. capensis* Thunbg. and is distinguished from it by the shortly pedicellate flowers somewhat exserted from small leaf-like bracts, and the much shorter outer calyx-lobes.

## CRASSULACEAE.

*Sedum (Crassula) cogmansense* O. Kuntze, p. 83.—Cape Province; Cogmanskloof.

*Crassula cogmansensis* (O. Kuntze) K. Schum. in Just. Jahresb. 26, I. 347 (1900).

The type has not been matched with any specimen in the Nat. Herb. Pretoria. It belongs to the section *Sphaeritis* Harv. and is evidently closely allied to *C. subaphylla* (E. & Z.) Harv., but differs in the short glabrous, ovate-acute leaves. The plant is apparently somewhat laxly branched. Schonland in Trans. Roy. Soc. S. Afr. 1930 omits mention of *C. cogmansensis*.

*Sedum crassiflorum* O. Kuntze, p. 84.—Natal; Glencoe.

*Crassula vaginata* E. & Z. Enum. 298 (1836).

*C. crassiflora* (O. Kuntze) K. Schum. l. c.

Schonland, l.c. 226, gives the name as "*Cr. crassifolia* O.K.n.sp." possibly taking it incorrectly from a herbarium sheet of the type number. The type sheet has written on it "*Sedum crassiflora*".

*Sedum (Crassula) transvalense* O. Kuntze, p. 85.—Transvaal; Johannesburg.

*Crassula transvaalensis* (O. Kuntze) K. Schum., l.c.

Schumann, it will be noted, corrected the spelling of the specific epithet. The label of the type specimen is written up as "*Crassula transvaaliensis* O.K." and Schonland, l.c. 188, has used this form.

## (Bruniaceae) VERBENACEAE.

*Ptyxostoma quadrifidum* O. Kuntze, p. 86. (Bruniaceae); Cape Province; Caledon.

*Campylostachys cernua* Kunth in Abh. Akad. Berlin 1831, 207 (Verbenaceae).

Kuntze went completely astray in the identification of this plant. Drawings of dissections on the type sheet are inaccurate. The type matches several authentically named specimens of *Campylostachys cernua* in the Nat. Herb. Pretoria, including duplicates of the Burchell and Zeyher gatherings.

## LYTHRACEAE.

**Nesaea Kuntzei** *Koehne ex O. Kuntze*, p. 97.—Natal; Ladysmith.

The type is not matched in the Nat. Herb. Pretoria.

## FICOIDEAE.

(Identifications by Dr. L. Bolus.)

**Mesembryanthemum cradockense** *O. Kuntze*, p. 109.—Cape; Cradock.

There are two mounted specimens of this in the New York Herbarium.

*Mesembryanthemum pulvinatum* *O. Kuntze*, p. 109—Cape Province; Beaufort West.

**Chasmatophyllum musculinum** (*Haw.*) *Schw.* in *Zeitschr. Sukkulentenk.* 3, 30 (1927).

There are four sheets of this in the New York Herbarium.

*Mesembryanthemum subspinosum* *O. Kuntze*, p. 109.—Cape Province; Cradock.

**Drosanthemum obliquum** (*Willd.*) *Schw.*, l.c. 18.

“As far as the material goes the Kuntze type agrees with this species” L. Bolus.

## UMBELLIFERAE.

*Alepida aquatica* *O. Kuntze*, p. 110.—Cape Province; Toise River Station.

**Alepidea amatymbica** *Ecklon & Zeyher* Enum. 1836, 339; Dümmer in *Trans. Roy. Soc. S. Afr.* 3, 5 (1913).

## RUBIACEAE.

*Plectronia Chamaedendrum* *O. Kuntze*, p. 122.—Natal.

**Pygmaeothamnus Chamaedendrum** (*O. Kuntze*) *Robyns* Monog. *Vangueriae* 1928, 35.

## DIPSACEAE.

**Cephalaria natalensis** *O. Kuntze*, p. 126.—Natal; Van Reenen's Pass.

Except that it is somewhat more densely pubescent the type is well matched by several specimens in the Nat. Herb. Pretoria.

## COMPOSITAE.

*Berkheyopsis Kuntzei* *O. Hoffm. ex O. Kuntze*, p. 136.—Cape; Modderriver Station.

**B. Echinus** (*Less.*) *O. Hoffm.* in *Engl. Prantl. Natur. Pflanz. Fam.* 4, 5. 311 (1894).

*Gazania Burchellii* *DC.* *Prod.* 6, 514 (1837); *Harv.* in *Fl. Cap.* 3. 479 (1864–1865) in part.

Harvey, l. c., cites several specimens under *Gazania Burchellii*. Judging by the description of the type and by an examination of a duplicate of *Zeyher* 976, one of the cited specimens, it appears likely that Harvey included two distinct species under the one name. The specimen of *Zeyher* 976, in the Nat. Herb. Pretoria, is a small plant agreeing with Harvey's description as far as it goes. Further, it has obtuse lacerate outer pappus scales, and those of the inner row are glabrous, whereas, in the majority of specimens in the Nat. Herb., which agree better with De Candolle's description of *G. Burchellii*, the outer pappus scales are linear-lanceolate, occasionally slightly lacerate in the upper half: the inner row are lanceolate and pubescent. These specimens agree also with the type of *Berkheyopsis Kuntzei*. On the assumption, however, that Harvey was correct in associating *Hirpicium Echinus* *Less.* (1832) with *Gazania Burchellii* *DC.* (1837), the Kuntze type of *Berkheyopsis Kuntzei* *O. Hoffm.* is identified as *B. Echinus* (*Less.*) *O. Hoffm.*



*Cotula radiata* O. Hoffm. ex O. Kuntze, p. 142.—Cape Province ; Toise River Station.

**Matricaria nigelliflora** DC. Prodr. 6, 50 (1837).

The type specimen of *Cotula radiata* O. Hoffm. was not well prepared and during drying the leaves shrivelled and lost the characteristic glaucous appearance.

*Crocodylodes amplexicaule* O. Kuntze, p. 143.—Natal ; Krantzklouf.

**Berkheya amplexicaulis** O. Hoffm. ex O. Kuntze l.c.

No specimen seen.

*Crocodylodes arctiifolium* O. Kuntze, p. 143.—Natal ; Van Reenen's Pass.

**Berkheya montana** Wood & Evans in Journ. Bot. 1897, 351.

*B. arctiifolia* O. Hoffm. ex O. Kuntze l.c.

The Kuntze specimen is covered with an unnatural "cobweb" which makes the indumentum appear denser than it is in reality.

*Crocodylodes Kuntzei* O. Kuntze, p. 143.—Cape ; Modder River Station.

**Berkheya Kuntzei** O. Hoffm. ex O. Kuntze l.c.

There are two specimens of this in the New York Herbarium, the type from Modder River Station and the other from Aliwal North. They show a close relationship to *Berkheya microcephala* comb. nov. (*Stobaea microcephala* DC.)

*Gnaphalium amplum* O. Kuntze, p. 150.—Natal ; Krantzklouf.

**Helichrysum platypterum** DC. Prodr. 6, 201 (1837).

*H. amplum* O. Hoffm. ex O. Kuntze l.c.

Moeser in Bot. Jahrb. 44. 341 (1910) suggests the above identification and this seems justified.

*Gnaphalium athrixifolium* O. Kuntze, p. 150.—Natal ; Colenso.

**Helichrysum athrixiifolium** O. Hoffm. ex O. Kuntze l.c.

Moeser l. c. 221, upholds this species. It is very closely allied to *H. rugulosum*, Less. and *H. polycladum* Klatt, being about intermediate between these in the size of the capitulum : the involucre bracts are light straw coloured as in *H. rosum* Less., another closely allied species.

*Gnaphalium Kuntzei* O. Kuntze, p. 152.—Natal ; Charlestown.

**Helichrysum Kuntzei** O. Hoffm. ex O. Kuntze, l.c.

Moeser, l.c., 279, upholds this species. It is closely allied to *H. simillimum* DC. and *H. capitellatum* Less.

*Gnaphalium mixtum* O. Kuntze, p. 152.—Cape Province ; Cathcart.

**Helichrysum mixtum** O. Hoffm. ex O. Kuntze, l.c.

Moeser, l.c., upholds this species but mentions that it is difficult to justify this owing to the close similarity to *H. longifolium* DC. and the apparent polymorphism in species of this group.

*Gnaphalium plantaginifolium* O. Kuntze, p. 153.—Cape Province ; Cathcart.

**Helichrysum coriaceum** Sond. in Linnaea 23, 65 (1850) not of Harv. ; Moeser, l.c. 264.

*H. plantaginifolium* O. Hoffm. ex Kuntze, l.c.

*Gnaphalium pulviniforme* O. Kuntze, p. 153.—Natal ; Van Reenen's Pass.

**Helichrysum Sutherlandi** Harv. in Fl. Cap. 3, 218 (1864-1865) ; Moeser, l.c. 306.

*H. pulviniforme* O. Hoffm. ex O. Kuntze, l.c.